

ABSTRACT

A cleaning process of exhaust gas which comprises the steps of bringing the exhaust gas containing at least one of nitrogen oxides or organic solvent into contact with a cleaning agent comprising metal as a reductive cleaning agent component and metal oxide as an oxidative cleaning agent component or comprising lower valent metal oxide as a reductive cleaning agent component and higher valent metal oxide as an oxidative cleaning agent component while heating them. Conducting at least one of reduction of the nitrogen oxides by the reductive cleaning agent component or oxidative decomposition of the organic solvent by the oxidative cleaning agent component, simultaneously detecting a variation of a constitutional ratio between the reductive cleaning agent component and the oxidative cleaning agent component with the progress of oxidation-reduction reaction, supplying a correction gas when the constitutional ratio deviates from a predetermined control range, and restoring the constitutional ratio within the control range. A cleaning process of exhaust gas containing nitrogen oxides and/or organic solvent with high and varying concentration discharged from a manufacturing process of semiconductor capable of easily cleaning at relatively low temperature and with high decomposition factor without using large-scale cleaning apparatus or a complicated structural cleaning apparatus is provided.